

## An *Arabidopsis thaliana* cDNA clone encoding a low molecular weight heat shock protein

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Submitted August 23, 1989

EMBL accession no. X16076

Similar to other plant species, *Arabidopsis thaliana* synthesizes multiple low molecular weight (lmw) heat shock proteins (hsps) in response to high temperature stress. We have characterized a cDNA encoding one of these hsps. A cDNA library was prepared using mRNA isolated from leaves of *A. thaliana* which had been heat stressed for 90 min at 37°C. The library was screened at reduced stringency with a cDNA encoding a lmw hsp from *Pisum sativum* (1). A cDNA clone, Athsp17.6, was identified which encoded a 157 amino acid, 17.6 kDa protein. Athsp17.6 cDNA hybridized to a transcript whose synthesis is heat inducible in *A. thaliana* plants. The amino acid sequence of Athsp17.6 is 73% identical to a soybean hsp encoded by Gmhsp17.5-E (2), as aligned below. Dashes show amino acid identities, asterisks indicate a gap. This is the second dicot plant for which a lmw hsp cDNA sequence has been reported.

## ACKNOWLEDGEMENTS

This research was supported by USDA-CRGO grant 88-37264-3914 and NIH-BRSR grant 507RPO-7002, to E. Vierling. We thank Lisa M. Lauzon for her technical assistance.

## REFERENCES

1. Vierling, E. and A. Sun (1989) in JH Cherry, ed, Environmental Stress in Plants; Biochemical and Physiological Mechanisms. Springer Verlag, New York, pp 343-354.
  2. Czarnecka, E. et. al.(1985) Proc. Natl. Acad. Sci. USA 82:3726-3730.